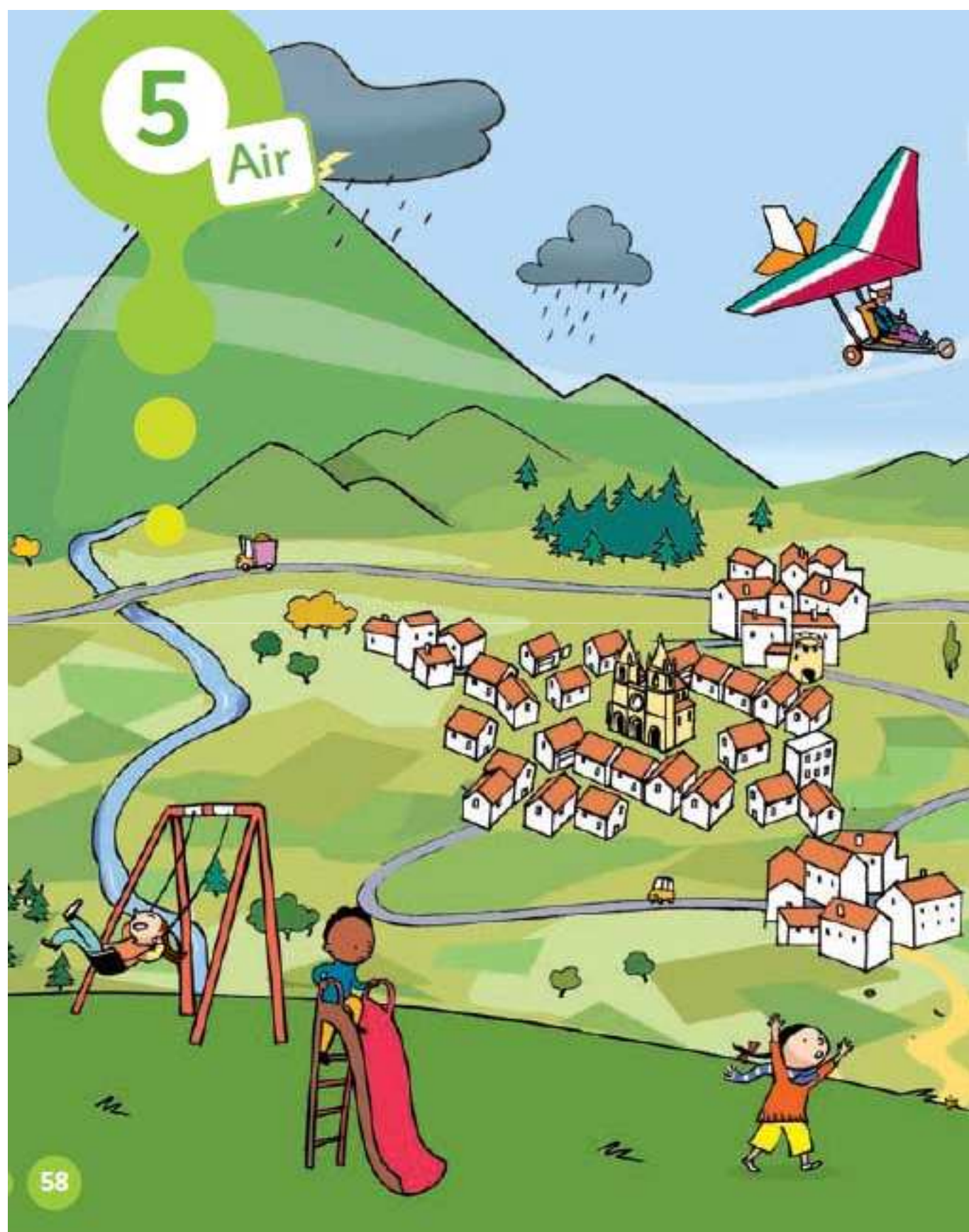


5

Air





Listen and find. 22

Listen to the descriptions.
Which terms are described? 23

the atmosphere

wind

rain

lightning

How can we measure wind speed?
With a thermometer? A ruler? An anemometer?

How many "weather" words do you know?

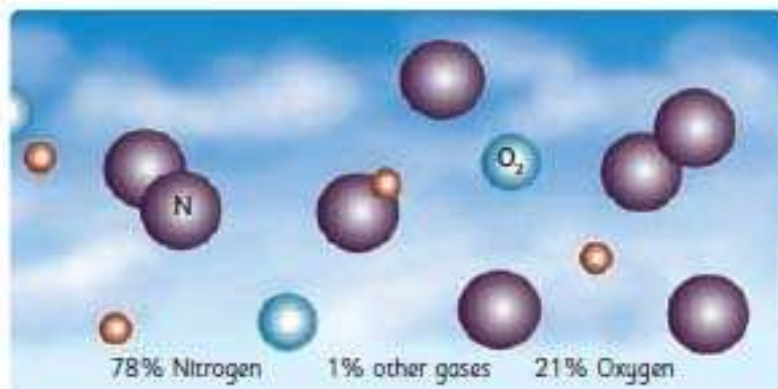
My words

Blanket, surface, layer, droplets, to surround,
to warm, to rise, to fall, to reach, to measure,
to dip.

The atmosphere is a thin layer of gases that surrounds and protects the Earth. The gases it contains include oxygen and carbon dioxide, which plants and animals need to survive. Life on our planet depends on the atmosphere.

Air

Air is all around us. Air is a mixture of gases. The most common gases found in the air are nitrogen and oxygen. There are other gases in very small quantities and also water vapour. Kites, balloons and aeroplanes float in the air.



Kites flying in the sky.

1 What is air made of?

During the day, the Sun warms up the Earth's surface, and the air changes temperature. As the air warms up, it rises. Warm air rises because it is lighter than cold air. When warm air rises, cold air rushes in to fill the space. Air is always moving. **Wind** is the movement of air.



Wind mills.

2 Why does a hot-air balloon rise?

The atmosphere

The Earth is surrounded by a blanket of air: the **atmosphere**. The atmosphere absorbs energy from the Sun, allows the water cycle to happen, and regulates electrical and magnetic forces. The atmosphere protects us from radiation and the cold of space.



A satellite view of the Earth.

1 What does the atmosphere absorb?



Layers of the atmosphere



Auroras occur in the Thermosphere. In this layer, astronauts orbit the Earth.

The Stratosphere is where jet aeroplanes fly. In the stratosphere, the ozone layer absorbs harmful ultraviolet rays from the Sun.

The Exosphere is the upper layer of our atmosphere, where atoms and molecules escape into space.

The Mesosphere is the coldest layer of the atmosphere. It can reach -90°C .

The Troposphere is the layer where weather occurs. The Earth absorbs the Sun's energy and then heats the air.

Now I know

Copy and complete the sentences.

1. The most common gas in the _____ is _____.
2. Air moves because of _____ in temperature.
3. Warm air is _____ than cold air.
4. Astronauts orbit the Earth in space stations in the _____.

nitrogen

lighter

air

changes

thermosphere

Put the layers of the atmosphere in order.

1. Troposphere
2. _____
3. _____
4. _____
5. _____

The weather

Temperature

A thermometer is an instrument for measuring temperature. Temperature is the degree of heat or cold contained in an object or substance.

Changes in temperature are caused by the movement of molecules. Atoms and molecules move faster when they are hot.



Wind

Wind is air in motion. Wind is caused by differences in air pressure in the atmosphere. Air under high pressure moves towards areas of low pressure and produces wind.



1 What is temperature?

2 Do you know the names of any winds?

Rain

Rain is a type of water precipitation.

The heat of the Sun causes the evaporation of water from oceans, lakes and rivers. Water vapour rises and expands forming clouds. When water vapour cools it rains.



Humidity

Humidity is the amount of water vapour in the air. When relative humidity is low, evaporation is rapid, wet clothes dry quickly and perspiration evaporates from the skin. When humidity is high, clothes dry slowly and body sweat cannot evaporate easily.



3 What is humidity?

Severe weather

Thunderstorms

When a storm contains thunder and lightning, it is called a thunderstorm. Lightning is a bright flash of electricity. Lightning can be very dangerous.



Snowstorms

A snowstorm is a heavy fall of snow. Heavy snow can block roads and cause power lines to fall down. Cold temperatures can be dangerous as well.



- 1 What's the difference between a thunderstorm and a snowstorm?

Floods

Floods sometimes happen after very heavy rain, when a lot of snow melts or when rivers rise. Floods that happen very quickly are called flash floods.



Droughts

Drought occurs when there is very little rainfall for a long time.



Now I know

- 1 Unscramble and write these examples of severe weather in your notebook.

1. l o d o f

2. d o u r t h g

3. t h n e r s t o m r u d

4. o w s n t o r m s

- 2 Copy the definitions, then write the word in the correct place.

1. Little or no rainfall over an extended period of time. →

2. The amount of water vapour in the air. →

3. Moving air →

4. Water precipitation →

wind

humidity

drought

rain

Measuring the weather

The thermometer, rain gauge, anemometer and hygrometer are instruments used to measure the weather.

Thermometer

We measure temperature using a thermometer. When the temperature increases, the mercury in the bulb expands and climbs the tube. When the temperature decreases, the mercury in the bulb contracts and moves down the tube.



Thermometer.



Rain gauge.



Anemometer.



Hygrometer.

Rain gauge

We measure rainfall with a rain gauge. A rain gauge is an open-ended can or tube that collects rainfall. The amount of rainfall is measured using a marked scale.

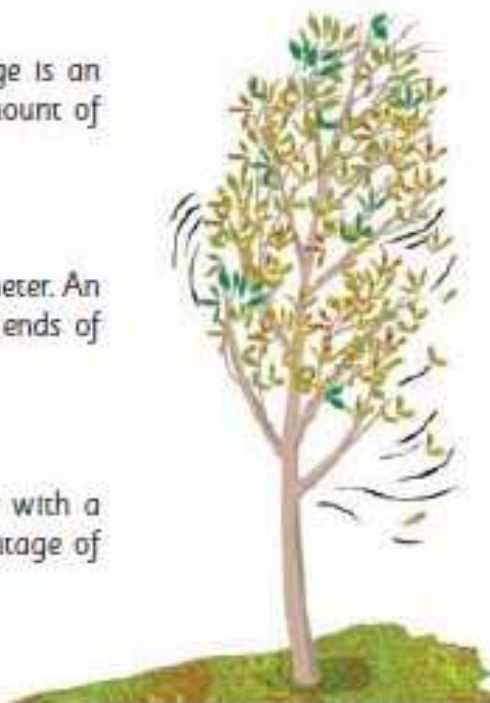
Anemometer

We measure wind speed and direction with an anemometer. An anemometer has three or four cups mounted on the ends of spokes that spin on an axle.

Hygrometer

We measure the amount of water vapour in the air with a hygrometer. The hygrometer lets us know the percentage of humidity in the air.

- 1 Which instrument do we use to measure rainfall?



Weather maps

A weather map describes the meteorological conditions in a specific geographic area, at a specific time.

- 1 Look at the different symbols. Do you know what they mean?



- 2 Read what the weather is going to be like tomorrow.

The north of Spain will be sunny, but the Canary Islands will be cloudy. There will be rain in the centre, and it will be very windy in the west. It will snow in the north-east of the country, and there will be thunderstorms in the east.

- 3 What is the weather like on the Balearic Islands?

Now I know

- Copy the symbols and label them.



- Copy and complete the sentences.

1. A _____ is an instrument used to measure humidity.
2. Rain and snow are examples of _____.
3. A _____ is an instrument used to measure temperature.

thermometer

hygrometer

precipitation

My turn

A windmill 24

Materials: 1 piece of paper, 1 drawing pin, 1 cardboard roll, scissors, sellotape.

We are going to learn how to make a paper windmill to see if the air moves or if it is still.



- Cut a piece of paper into a square.
- Take the top left-hand corner of your square and fold it to the opposite corner. Repeat with the top right-hand corner.



- When you open the square, you will see an X.
- Cut along each centre fold. Leave a 2 cm gap before the centre.



- Curve each corner into the centre of the square. Make sure the corners overlap each other. Fasten them with sellotape.

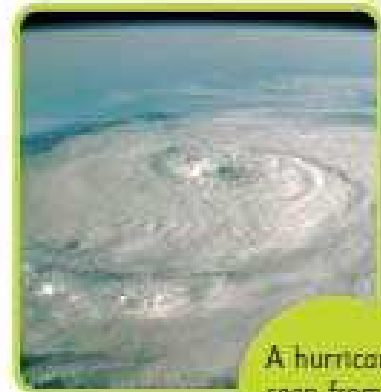


- Put the drawing pin through the centre of the paper, then through the cardboard roll. What happens if you blow?

Our world

Hurricanes

Hurricanes are huge storms that usually last for more than a week. Hurricanes move at over 120 kilometres per hour. Contact with warm water in the ocean gives them energy. The evaporation of water increases their power. When hurricanes reach land they cause a lot of damage to houses, buildings, trees and cars. The centre of a hurricane is called the eye.



A hurricane seen from space.

1 Do you know what a hurricane is?



The hurricane season

The Atlantic hurricane season is from the 1st June to the 30th November, but most hurricanes occur during autumn. The Eastern Pacific hurricane season is from the 15th May to the 30th November.

Measuring hurricanes

Some hurricanes are stronger than others. Scientists categorise hurricanes using the Saffir-Simpson scale. On this scale, hurricanes are ranked from 1 to 5.

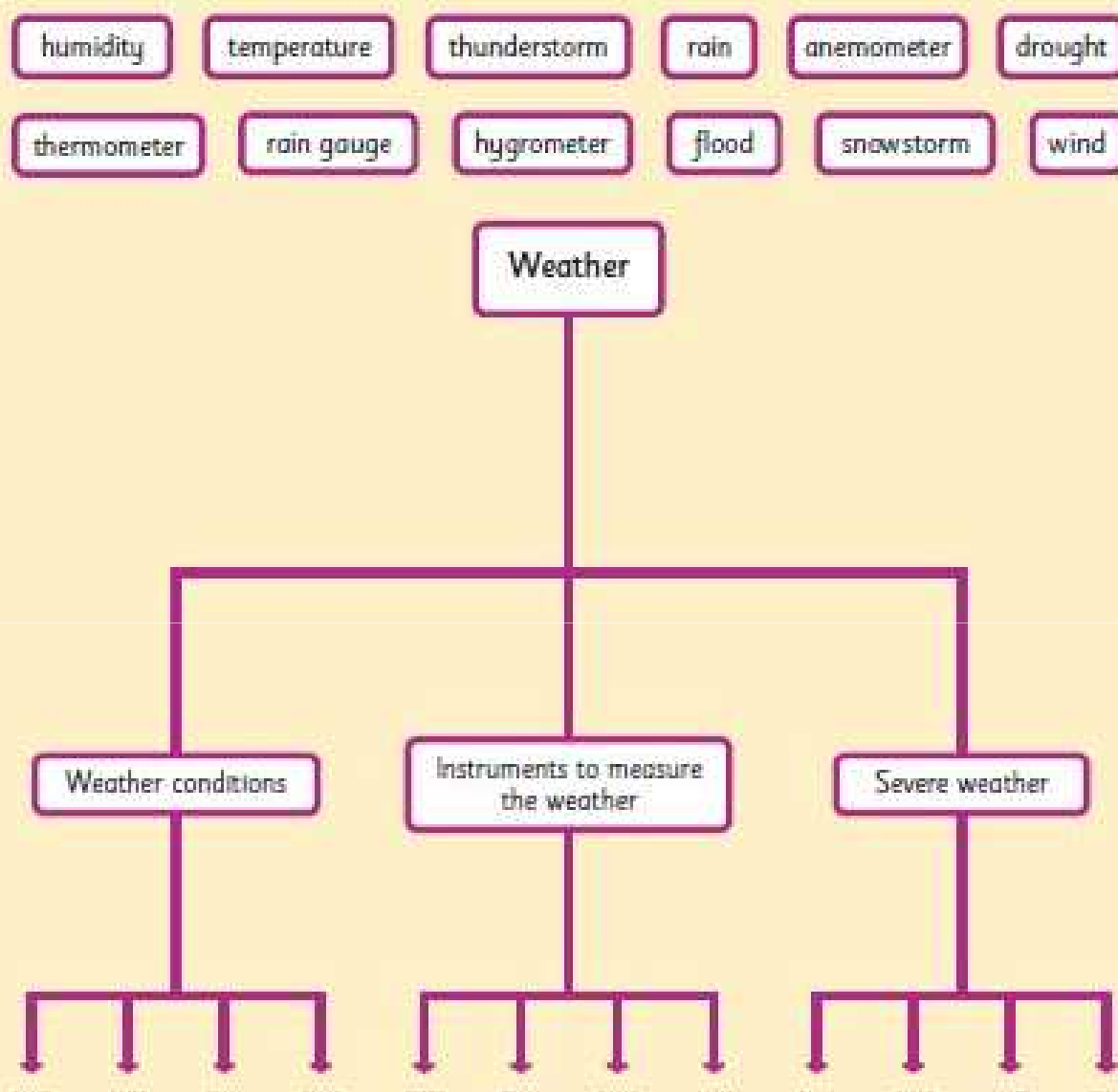
CATEGORY	WINDS	DAMAGE
ONE	74-95 mph	Minor
TWO	96-110 mph	Moderate
THREE	111-130 mph	Major
FOUR	131-155 mph	Extensive
FIVE	156 mph+	Catastrophic

The Saffir-Simpson scale.

2 Which hurricanes do you think are the most dangerous? Number 1? Number 3? Number 5?

Organising what I know

- 1 Look at the mind map. **Copy** and **complete** it. Use the words in the boxes.



- 2 Can you **add** more words?
- 3 Listen to the definitions. Which elements of weather are described? 25
- 4 Explain what the weather is like on a spring day where you live. Draw a weather map.

Picture dictionary Unit 5



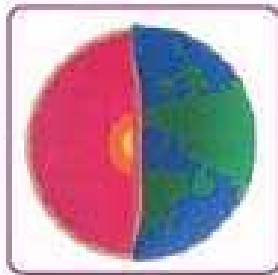
Blanket

If you feel cold, cover yourself with a blanket.



Rain gauge

We use a rain gauge to measure the amount of water precipitation.



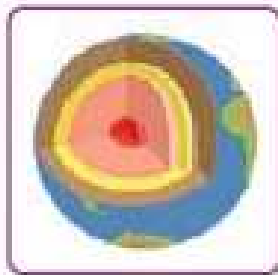
Surface

We live on the surface of the Earth.



To surround

The atmosphere surrounds the Earth.



Layer

The core, mantle and crust are the layers of the Earth.



To keep warm

Your coat helps you keep warm.



Droplets

When clouds get cold, the water vapour turns into water droplets that fall as rain.



To rise

The Sun rises early in the morning.



Thermometer

We use a thermometer to measure temperature.



To reach

Sunlight reaches the Earth.